

FIG. 1A

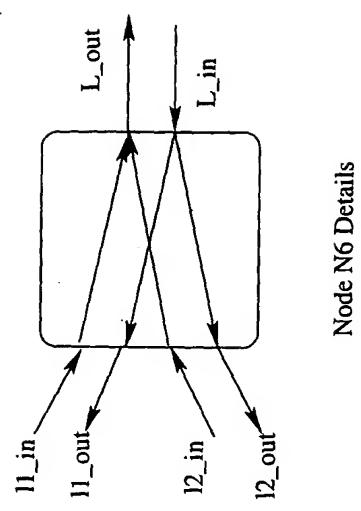
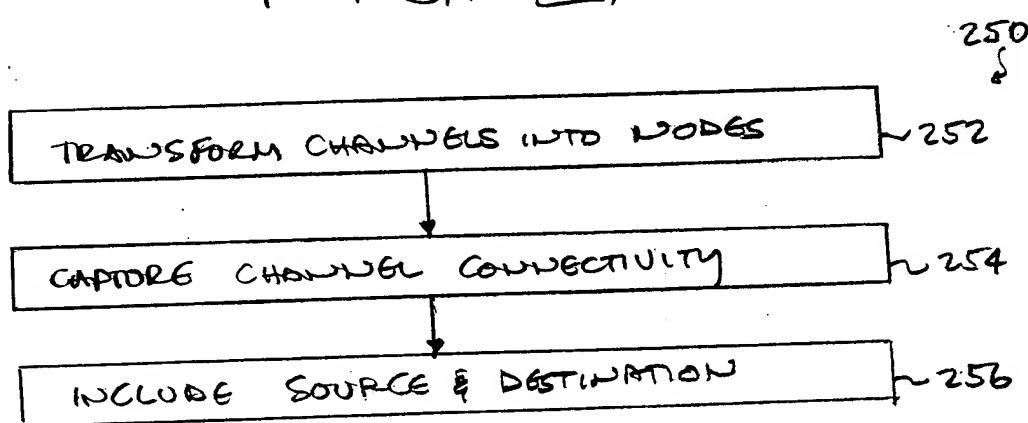
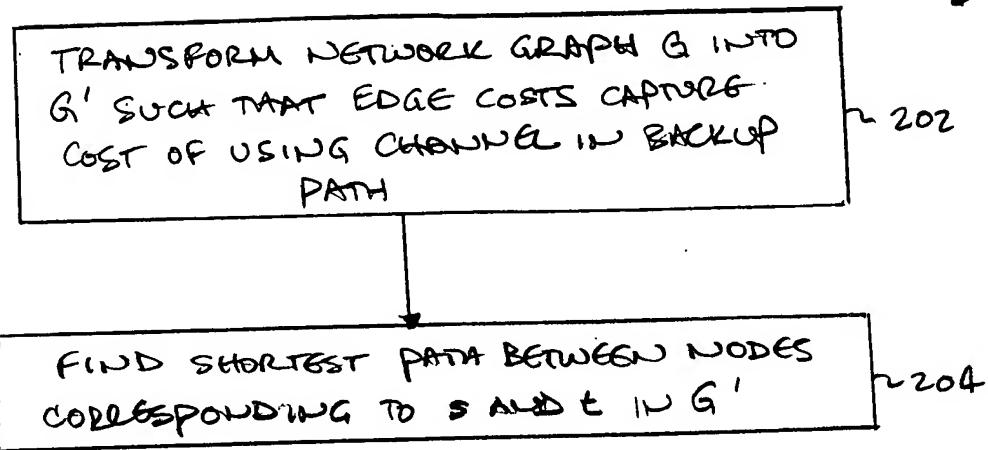


FIG. 1B



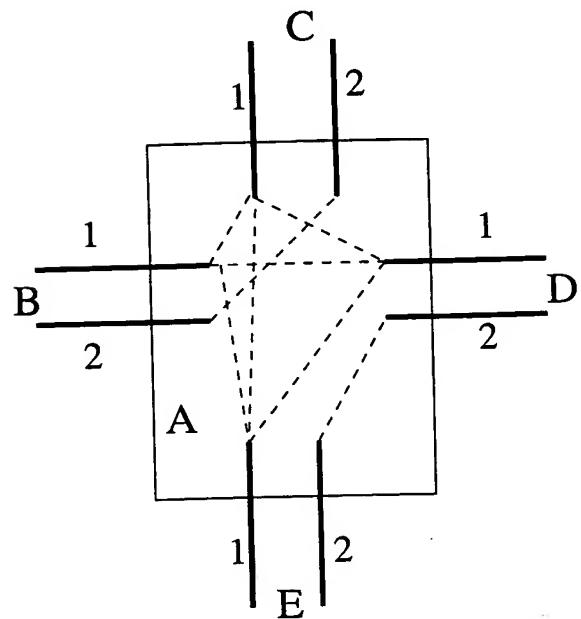


FIG. 3A

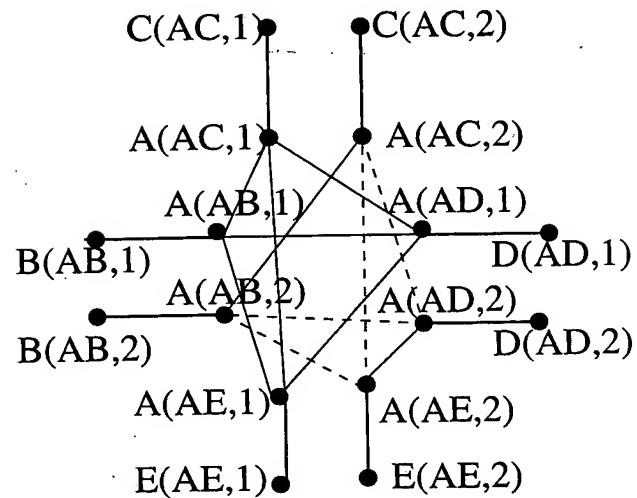


FIG. 3B

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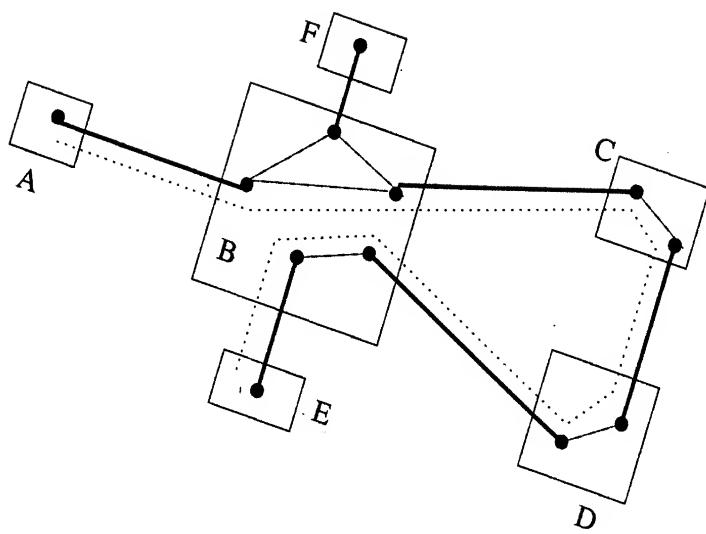


FIG. 4

~502

FIND  $r$  SHORTEST PATHS BETWEEN  $s$  AND  $t$   
IN GRAPH USING LAWLER'S ALGORITHM

~504

FOR EACH PATH, COMPUTE A CORRESPONDING  
CHEAPEST LOOPLESS K-SHARED PATH

~506

SELECT CHEAPEST AMONG  $r$  K-SHARED  
PATHS AS THE BACKUP PATH

## FIG. 5A

LET PATH BE  $P = u_1 - u_2 - \dots - u_r$

~552

BUILD DIRECTED GRAPH  $S$  CONTAINING ONLY  
NODES AND LINKS FROM  $P$

~554

TRANSFORM  $S$  WITH  $u_1$  AND  $u_r$  AS SOURCE  
AND DESTINATION NODES

~556

## FIG. 5B

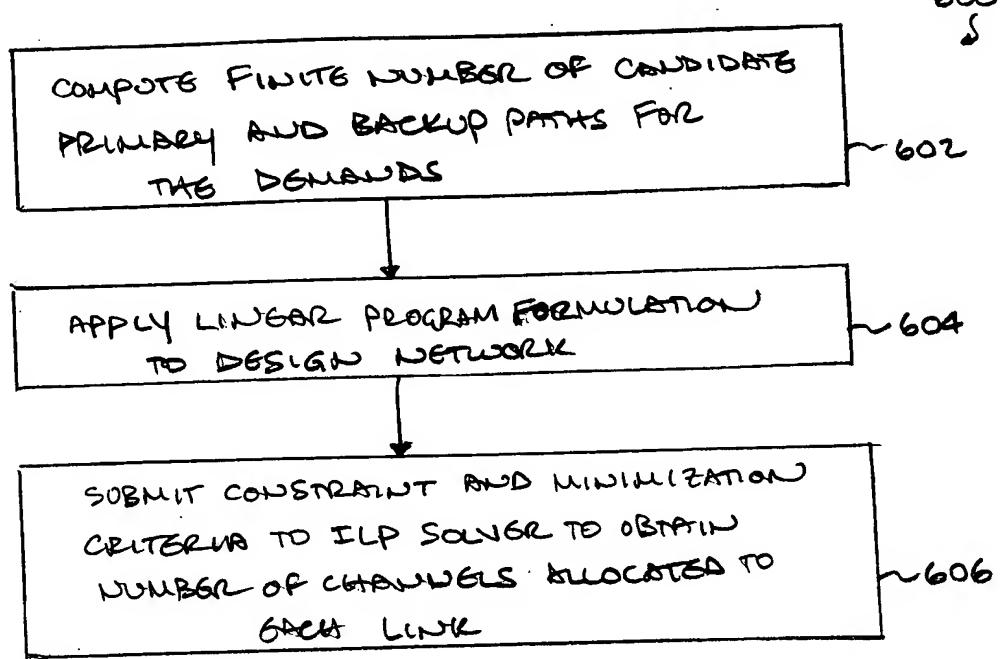


FIG. 6

F | 6. 7

